Impacts to Workers from Industrial Hazards. As many as 3 fatalities could occur at the storage and generator sites during the first 100 years under the No-Action Alternative with Inventory Module 1. This compares to 2 worker fatalities during the first 100 years with the 70,000-MTHM inventory. Over the next 9,900 years, approximately 490 fatalities could occur under No-Action Scenario 1 with Inventory Module 1, in comparison to 320 with the 70,000-MTHM inventory. No industrial hazard fatalities are projected for either the 70,000-MTHM inventory or Inventory Module 1 under No-Action Scenario 2 after the first 100 years because that scenario assumes there would be no workers at the sites.

Radiological Impacts to Workers. Approximately 43 latent cancer fatalities could occur at the storage and generator sites as a result of No-Action Scenario 1 with Inventory Module 1 over 10,000 years. This compares to 28 latent cancer fatalities in the worker population with the 70,000-MTHM inventory.

ESTIMATED NATIONAL TRANSPORTATION IMPACTS INVENTORY MODULE 1 OR 2 (for 38 years of operation)[a]

Impact	Mostly legal-weight truck scenario	Mostly rail scenario
Incident-free latent cancer fatalities		
Involved worker	24	7
Public[b]	5	<2
Latent cancer fatalities from accidents		
Public	0.0004	0.0008
Traffic fatalities[c]	9	6
Latent cancer fatalities from maximum reasonably foreseeable accident	0.55	5
Frequency of occurrence per year	2.3×10^{-7}	2.8×10^{-7}

a. Modules 1 and 2 involve approximately the same number of shipments.
b. Potential latent cancer fatalities result from very small doses to a very large population.
c. Does not include 13 to 20 fatalities that could occur from repository workers commuting and transporting construction materials to the repository.

As with the 70,000-MTHM inventory, no latent cancer fatalities are projected in the worker population for Inventory Module 1 under No-Action Scenario 2 after 100 years because there would be no workers at the sites.

Radiological Impacts to the Public. About 5 latent cancer fatalities could occur in the exposed population over 10,000 years as a result of No-Action Scenario 1 with Inventory Module 1. This compares to about 4 latent cancer fatalities with the 70,000-MTHM inventory.

Under No-Action Scenario 2, the number of latent cancer fatalities could increase from about 3,300 in the exposed population with the 70,000-MTHM inventory over 10,000 years to about 3,700 in the same period with Inventory Module 1.

S.9 Management Actions to Mitigate Potential Adverse Environmental Impacts

DOE has identified the types of mitigation measures it could take to reduce or avoid potential adverse impacts from construction, operation and monitoring, and closure of the proposed repository. The type of actions identified to date include:

- Commitments included as part of the Proposed Action that would reduce impacts. These commitments are based on DOE's studies of Yucca Mountain that have been ongoing for more than 10 years.

- Actions that are under consideration in the event the U.S. Nuclear Regulatory Commission grants a license for the site. DOE would continue to evaluate these potential additional commitments. The analyses in the EIS do not take credit for these mitigations that may be decided on in the future.

In addition, DOE continues to evaluate additional measures to improve the long-term performance of the repository and to reduce uncertainties in estimates of performance. These measures include barriers to limit releases and transport of radionuclides, measures to control heat and moisture in the underground, and various designs to support operational considerations.

S.10 Unavoidable Adverse Impacts; Short-Term Uses and Long-Term Productivity; and Irreversible or Irretrievable Commitments of Resources

The construction, operation and monitoring, and eventual closure of the proposed Yucca Mountain Repository and the associated transportation of spent nuclear fuel and high-level radioactive waste would have the potential to produce some environmental impacts that DOE could not completely mitigate. Similarly, some aspects of the Proposed Action could affect the long-term productivity of the environment or would require the permanent use of some resources. For example:

- The permanent withdrawal of approximately 600 square kilometers (230 square miles) of land for the repository would be likely to prevent human use of the withdrawn lands for other purposes.

- Death or displacement of individual members of some animal species, including the desert tortoise, as a result of site clearing and vehicle traffic would be unavoidable.

- Injuries to workers or worker fatalities could result from facility construction, including accidents.

- Transportation of spent nuclear fuel and high-level radioactive waste would have the potential to affect workers and the public through exposure to radiation and vehicle emissions, and through traffic accidents.

Further, in the view of the Native American tribes in the Yucca Mountain region, the implementation of the proposed repository and its facilities would further degrade the environmental setting. Even after closure and reclamation, the presence of the repository would, from the perspective of Native Americans, result in an irreversible impact to traditional lands.

In addition, the Proposed Action would involve the following commitments of resources:

- Electric power, fossil fuels, and construction materials would be irreversibly committed to the project.

- DOE would use fossil fuel from the nationwide supply system to transport spent nuclear fuel and high-level radioactive waste to the repository.

S.11 Statutory and Other Applicable Requirements

Several statutes and regulations would apply to the licensing, development, operation, and closure of a geologic repository. These include the NWPA; the National Environmental Policy Act; the Atomic Energy Act; the Federal Land Policy and Management Act of 1976; site-specific public health and environmental radiation protection standards established by the Environmental Protection Agency; site-specific technical licensing regulations established by the Nuclear Regulatory Commission; and site